DISTRIBUTION: __ARCHITECT __FIELD __CONTRACTOR OFFICE
__MECH/ELEC ENG. __OWNER _X_FILE

FIELD REPORT

M. G. McLaren, P. C.
Consulting Engineers
100 Snake Hill Road
West Nyack, NY 10994

PROJECT: Contact Tank
Greenburgh, NY

FIELD REPORT NO: 04
ENGINEER'S PROJECT NO: 99010

Date: March 10, 2004
Time: 9:00 A.M. – 6:00 P.M.

Weather: Overcast
Temp. Range: 45 Degrees F.

Work in Progress: Concrete Core Sampling of the Tank Roof Slab

Present at Site:

Ken Cioce – Town of Greenburgh
Tony Capicatto – Dolpf Rotfeld
Ed Melendez – Fairway Testing
Greg Discitello – Fairway Testing
Rick Mahoney – M.G. McLaren, P.C. (MGM)

REPORT BY: W. Richard Mahoney, P.E.

The scope of this report is the observation of the core sampling of the roof slab of the Contact Tank in Greenburgh, New York performed by Fairway Testing. Fairway Testing will perform strength tests on two sets of the core samples. Several samples will be sent to American Petrographic in St. Paul, MN for petrographic examination. These tests will be performed in accordance with testing drawing T1, prepared by MGM and dated December 9, 2003. The diameter of the cores recovered is approximately 3 1/2″. Cores were obtained by using a hollow-barrel 4-inch diameter bit and a Milwaukee core-drilling machine. The drill is held stationary in place by using a 3/8-inch diameter Rawl wedge anchor bolt inserted into a drill hole installed in the base slab and placed into the bolt slot of the machine. The machine is leveled and the bolt is tensioned locking the machine into position.

OBSERVATIONS AND RECOMMENDATIONS:

We observed that the KIM coating that had been previously applied to the surface of the concrete roof slab appears to be spalling in a number of locations, including the KIM detail treatment to the cracks in the slab.

The area from which the core samples were taken was identified by Rick Mahoney of MGM. This location is identified on drawings T1. Greg Discitello used an electronic rebar-location machine to locate cores between the reinforcing bars. Ed Melendez of Fairway Testing set the machine in position and bolted it down at each bore hole. Water was injected into the hollow drill bit to cool the bit during the coring operation. (See photos 1 and 2.)

East Side Samples

There were 5 successful core samples obtained from the east side of the roof slab of the contact tank. See the attached sketch, SK031004-1 for the arrangement of the samples. Core sample E2 was abandoned when a reinforcing bar was encountered 3 1/2″ from the surface of the concrete. Core sample E1 was terminated when a reinforcing bar was encountered at 8 1/2″ from the slab surface and was broken off at that point and retrieved. Samples E3 and E4 were stopped at approximately 8 3/4″, where they were broken off and retrieved. Samples E1, E3 and E4 will be tested for strength.

Core Samples E5 and E6 were located on the crack near the edge of the slab. The center of the core samples were located 5 inches from the edge of the slab. The crack at the top of the slab in sample E5 is located at the center of the core. It projects downward approximately 1 3/4″ and then goes down towards the east at approximately a 45 degree angle. (See photo #3.) There is a vertically oriented water-stop located at approximately the center of the core. The top of the water-stop is located 11 inches from the top of the slab. The impression of the ribs of the water-stop was visible on the core sample. The crack at the top of the slab in sample E6 is the same size as the crack in sample E5. This crack has formed through the Kim repair material. (See photo #4.) The top of the water-stop in sample E6 leans over at approximately 45 degrees towards the east. The top of the water-stop is 11 1/2″ down from the slab surface. The impression of the water-stop ribs is visible on the core sample. (See photo #5 and #6.) There was some difficulty recovering these cores because they were wedged in the hollow drill bit. They were recovered by tapping the outside of the hollow bit releasing the cores. Core samples E5 and E6 will have a petrographic examination according to drawing M.G. McLaren drawing T1 dated December 9, 2004.

West Side Samples

There were 5 successful core samples obtained from the west side of the roof slab of the contact tank. See attached sketch SK030904-2 for arrangement of the samples.

Core samples W1 through W3 were drilled to 8 3/4″ and broken off. While setting up for core sample W3, the concrete around the wedge anchor failed while tensioning the wedge anchor bolt. (See photo #1, #7 and #8.) The wedge anchor insert was relocated to the opposite side of the proposed core sample and the core was successfully completed. Cores W1, W2 and W3 will be tested for strength.

Core samples W4 and W5 were located 7″ and 8 1/2″ from the edge of the slab to the centerline of the core samples respectively. This put the core sample inside the edge of the crack at the west side of the tank. This was done to prevent wedging of the cores in the drill bit as we had experienced at cores E5 and E6.

Core sample W5 was 15 inches long. A formed edge was encountered at the bottom center of the core. (See photo #9 and #10.) There was no ribbed impression, such as the ones we had seen from the water-stop in samples E5 and E6.

Core sample W4 was recovered in a number of pieces that were the result of trying to remove the sample after it was broken off. We eventually found that a tie wire was embedded in the core and in the concrete below the core break off point, preventing us from removing the core intact. A lightweight chipping machine was used to remove the concrete at the edge of the slab permitting removal of the parts of the core. A small piece of the water-stop was embedded in one of the pieces of the core sample. Cores W4 and W5 will have petrographic examinations.

End of Report

P:\Proj99\99010\FldRpt04 03-10-04.doc

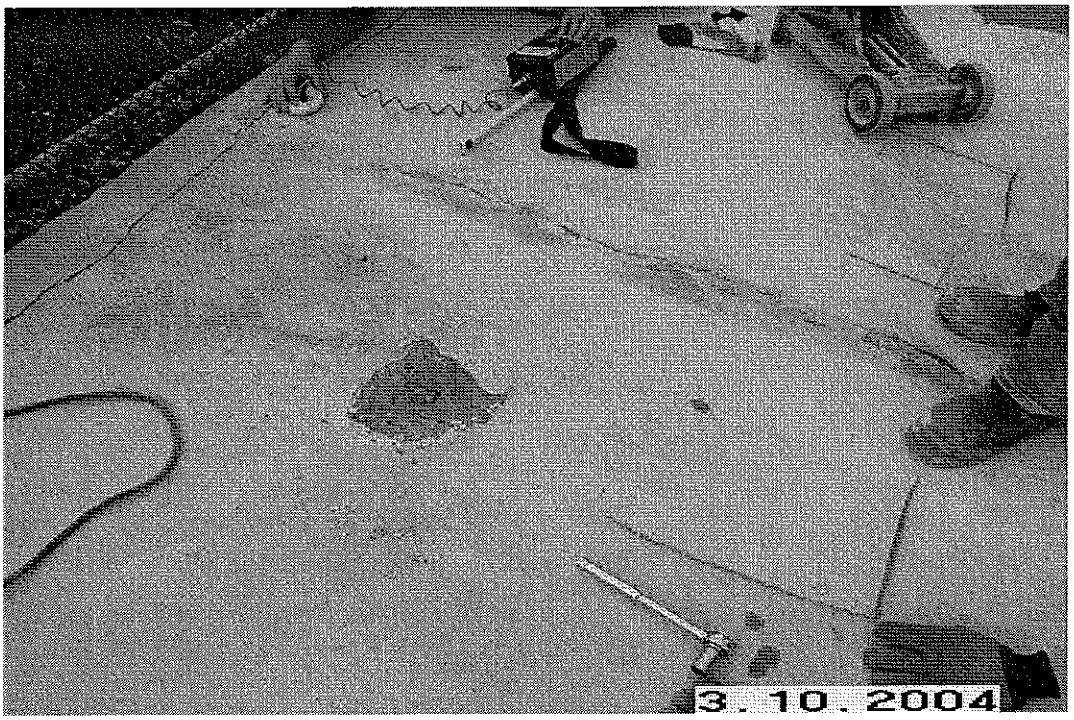

Photo No. 1 – Rebar Detection and Spall at West Side

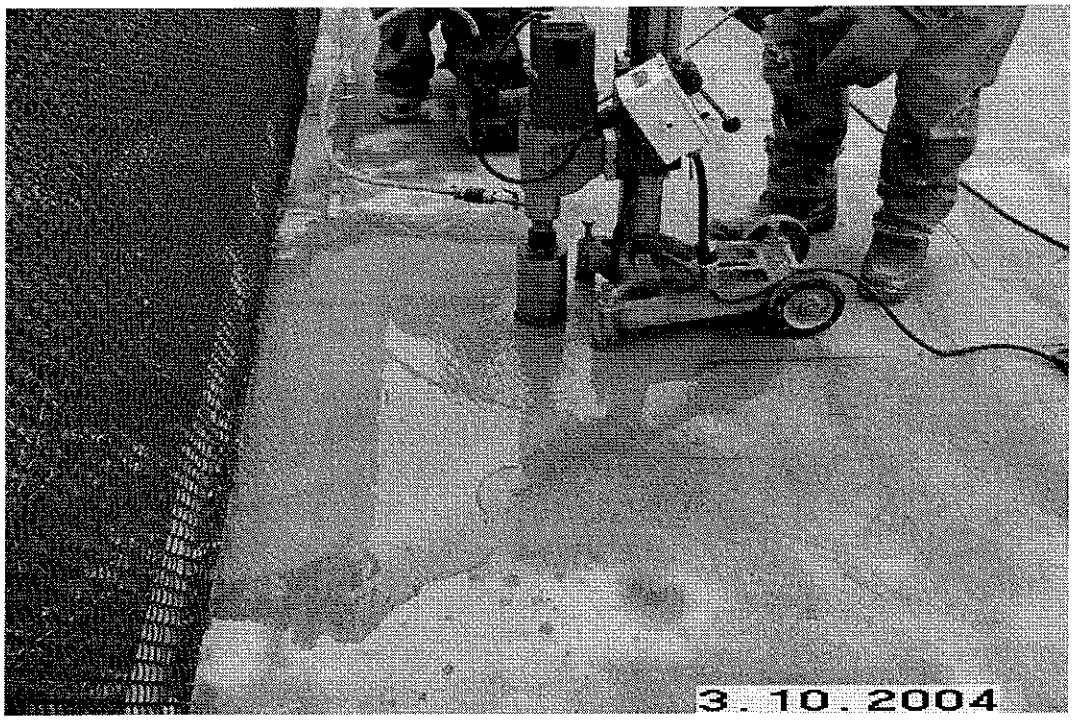

Photo No. 2 – Core Drilling Machine

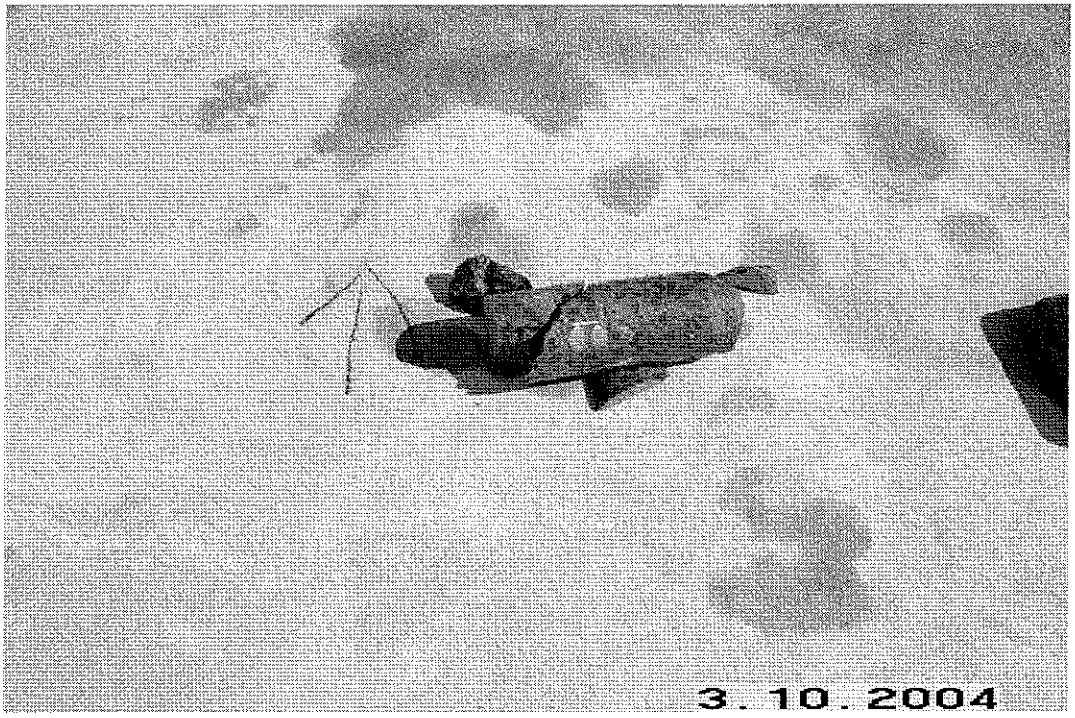

Photo No. 3 – Core E5. Top of Core at Left of Slab. Arrow Indicates East.

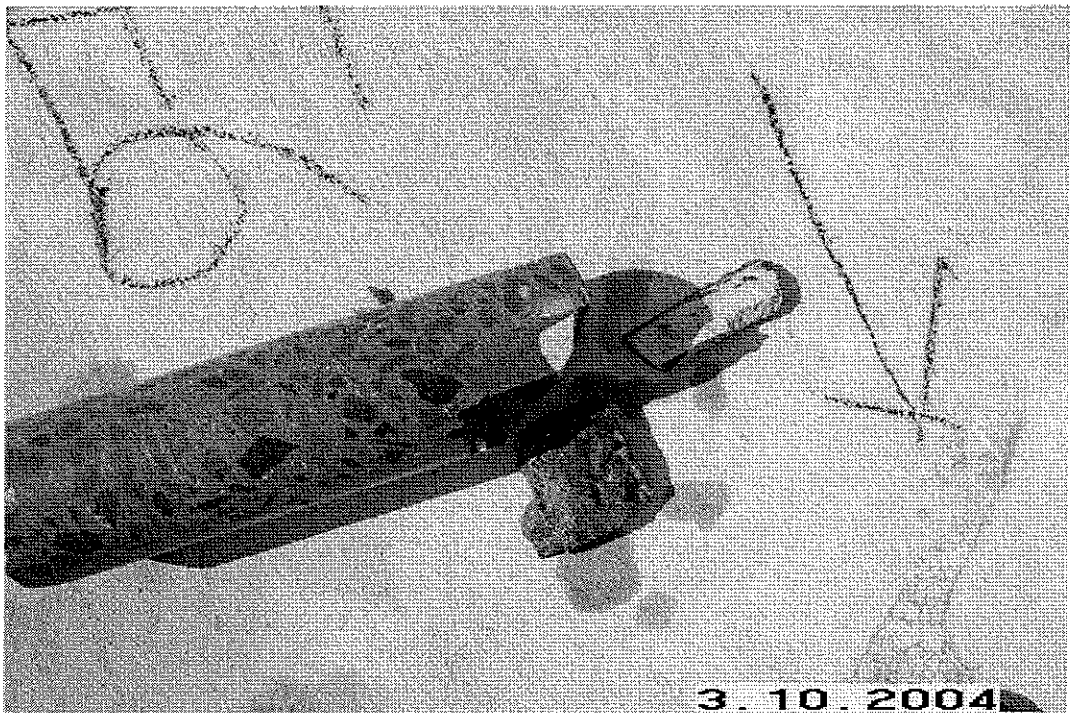

Photo No. 4 – Core E6. Kim Repair Material at Crack at Top of Slab. Arrow indicates East.

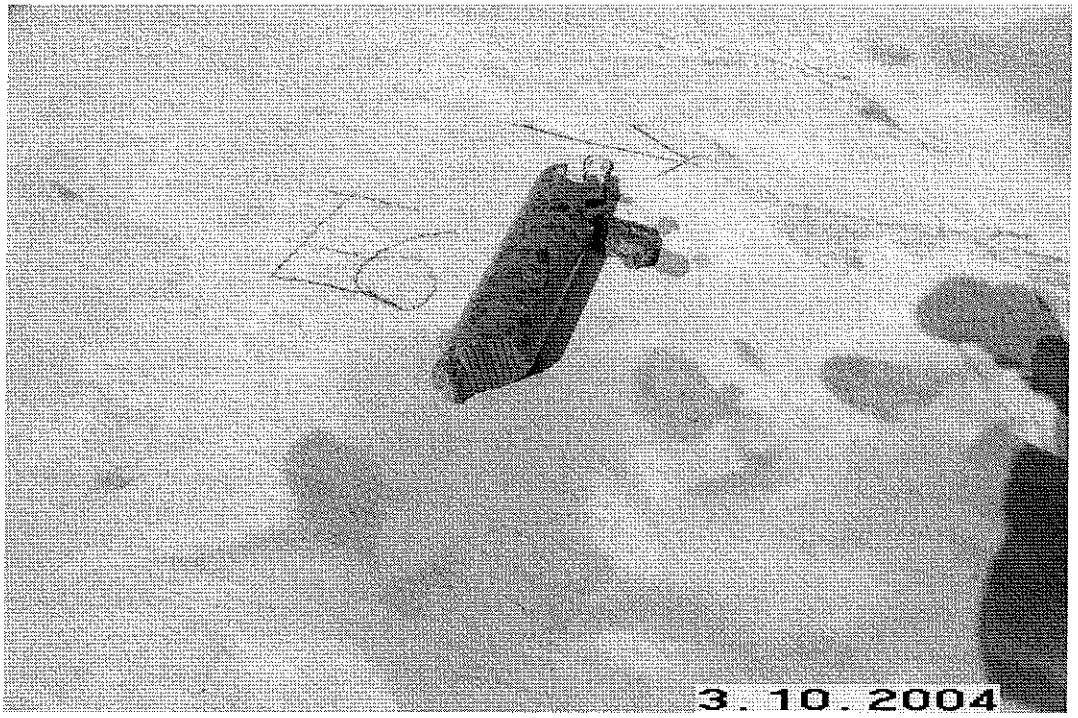

Photo No. 5 – Core E6. Folded over Waterstop Impression at Bottom of Core. Arrow indicates East.

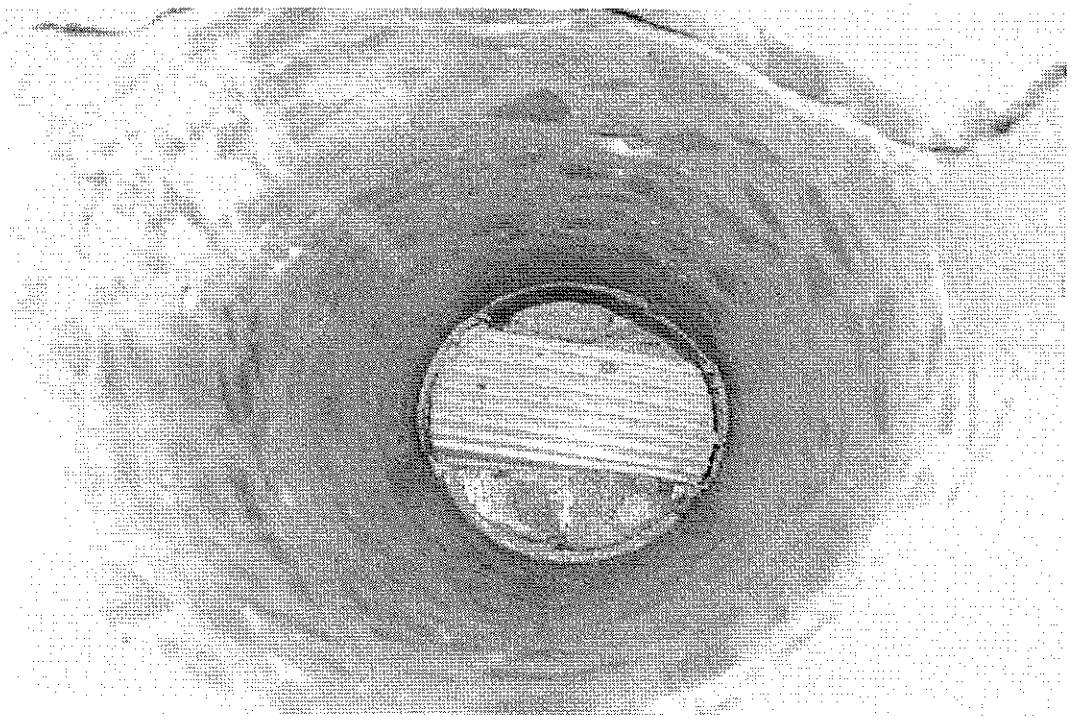

Photo No. 6 – Core E6. Folded Over Waterstop

Photo No. 7 – Spall at West Side

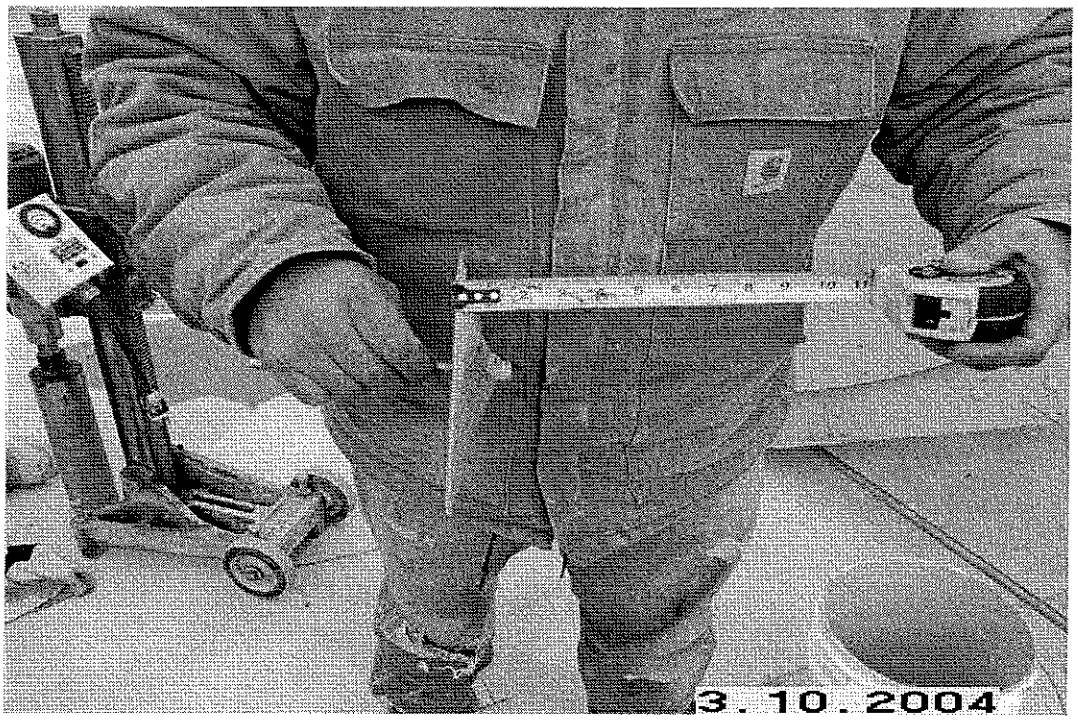

Photo No. 8 – Spall at West Side

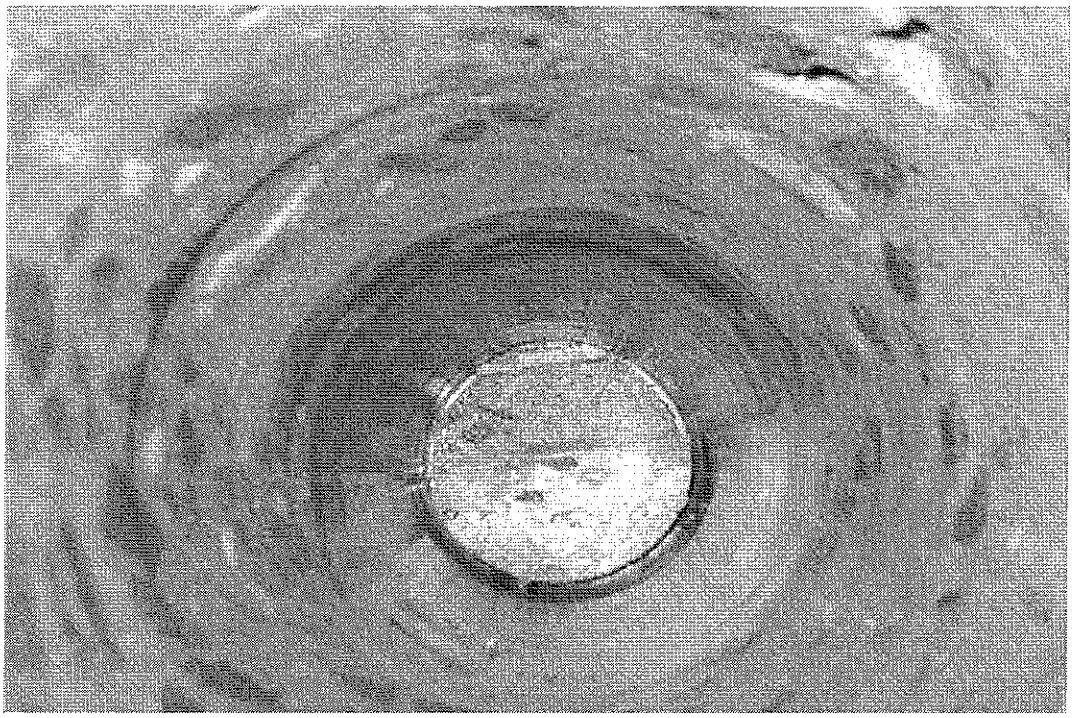

Photo No. 9 – Core W5

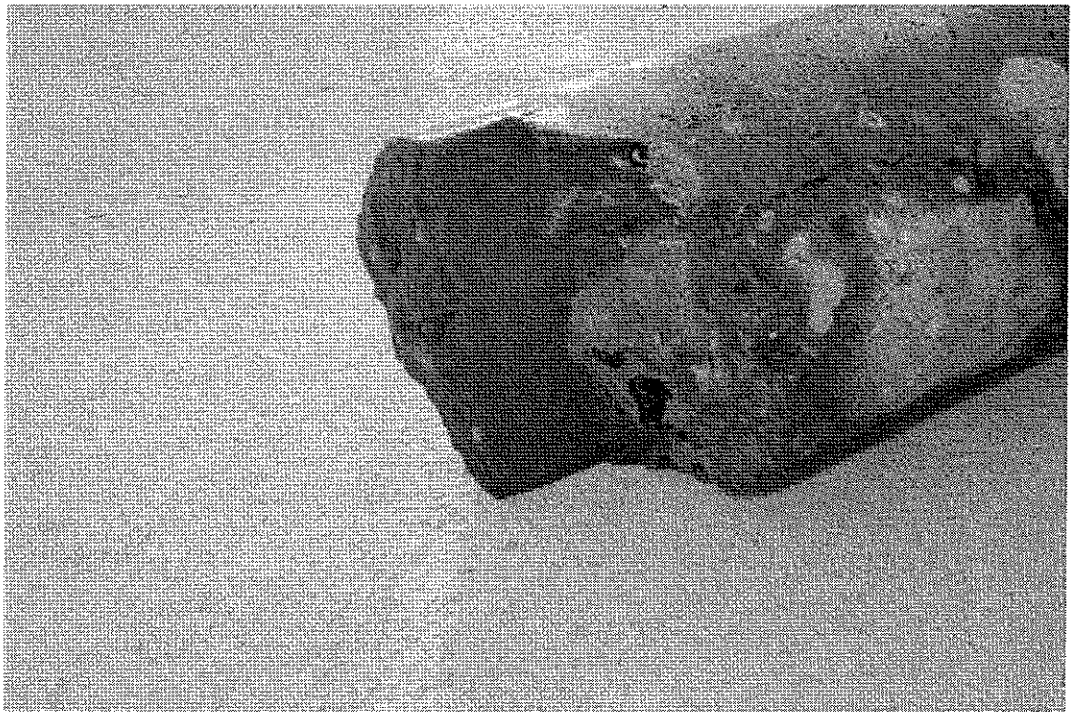

Photo No. 10 – Test Gage From Pressure Test